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EXAMINER

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ART UNIT PAPER NUMBER

2189

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/699,145

Applicant(s)

KAEWELL ET AL.

Examiner

Christopher E. Lee

Art Unit

2189

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Drawings***

1. The his application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference sign 102_n on page 8, line 2, is not shown on the drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

In Figure 2, the reference signs 98, 104, 106_l and 134_l-134₄ are not used in the specification.

In Figure 3, the reference signs 22, 24, 44, 52, 54 and 58 are not used in the specification.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "102_l", "104_l", "106_l" in Figure 2 have been used to designate (1) both the 1_{st} BR 102 and the n_{th} BR 102 in case of "102_l", (2) both the 1_{st} BR 104 and the n_{th} BR 104 in case of "104_l", and (3) both the 1_{st} BR 106 and the n_{th} BR 106 in case of "106_l", respectively. A proposed drawing correction or

corrected drawings are required in reply to the Office action to avoid abandonment of the application.

The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

On page 3, lines 11-12, substitute "air interface 56" by "air interface 38".

Appropriate correction is required.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In the claims 1, 9 and 15, the claims recite that the subject matters "modem interface", "means for transferring data" or "radio network terminal" comprise the subject matters "a plurality of parallel data highways" and "a processor" (See claims 1, 9 and 15). However, these subject matters and their limitations are not disclosed in the Application disclosure. Furthermore, the disclosure describes the subject matter "wireless interface" comprise the subject matters "a plurality of parallel data highways" and "a processor" (See Application, page 2, lines 17-24), instead.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a modem interface for transferring data between a high data rate interface and a wireless interface, the wireless interface comprises a plurality of parallel data highways (See Application, page 2, lines 17-18), does not reasonably provide enablement for a modem interface for transferring data between a high data rate interface and a wireless interface, the modem interface comprises a plurality of parallel data highways (See claim 1). The specification does not enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The Applicant discloses an inconsistent limitations in the specification, such that the disclosure description and the claims.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig et al. [US 6,101,198 A ; hereinafter Koenig] in view of Applicant Admitted Prior Art [hereinafter AAPA].

Referring to claim 1, Koenig discloses a modem interface (i.e., processor based voice and data TSI system 20 of Fig. 4) for transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said modem interface comprising: a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62), said plurality of data highways outputting (e.g., framing by Framer 60 of Fig. 4) data to said first and

second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 36 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said first high data rate interface (i.e., T-1 48 of Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 38 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said second high data rate interface (i.e., T-1 50 of Fig. 4); and a processor (i.e., DSP processor 24 of Fig. 4) for controlling data transfer between said plurality of data highways (See col. 11, lines 58-65).

Koenig does not expressly teach said second high data rate interface is a wireless interface.

AAPA discloses a modem interface (See MODEM interface 34 of Fig. 1 and page 1, line 8 through page 2, line 10), wherein said modem interface for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted said wireless interface, as disclosed by AAPA, for said second high data rate interface, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claim 8, Koenig, as modified by AAPA, teaches said frames have time slots (See the above prior claim 1 rejection), but does not expressly teach said frames have sixteen time slots.

However, the claim recites said sixteen time slots without any patentable advantage in the specification (See claim 8 and Application, page 4, line 17). In other words, the Applicant states a preferred frame would have sixteen (16) time slots, which means said specific number of time slots (16) in a frame is chosen among any number of time slots per frame as a preference of one of ordinary skill in the art.

Therefore, the limitation of said sixteen time slots in the claim is not patentably significant since it at most

relates to the number of time slots in a frame under consideration which is not ordinarily a matter of invention. *In re Yount*, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

Referring to claim 9, Koenig discloses a method for transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said method comprising: a modem interface (i.e., processor based voice and data TSI system 20 of Fig. 4) provides a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62); means for inputting (e.g., Framer 44 of Fig. 4) inputs data to said data highways (e.g., PCM highways 36 and 38 in Fig. 4) from said first and second high data rate interfaces (i.e., T-1 48 and T-1 50 in Fig. 4) in selected time slots (See col. 11, lines 43-50); a processor (i.e., DSP processor 24 of Fig. 4) controls data transfer between said plurality of highways (See col. 11, lines 58-65); and means for outputting (e.g., Framer 60 of Fig. 4) outputs (i.e., frames) data to said first and second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50). Koenig does not expressly teach said second high data rate interface is a wireless interface.

AAPA discloses a modem interface (See MODEM interface 34 of Fig. 1 and page 1, line 8 through page 2, line 10), wherein said modem interface for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted said wireless interface, as disclosed by AAPA, for said second high data rate interface, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claims 4 and 12, Koenig, as modified by AAPA, does not teach said plurality of parallel data highways is three parallel data highways, but Koenig teaches N number of parallel data highways (See Koenig , col. 9, lines 42-51).

However, the claim recites said three parallel data highways without any patentable advantage in the specification (See claim 4 and Application, page 4, line 15). In other words, the Applicant states a multiple data highway structure is used, such as three (3) PCM highways (See Application, page 4, line 15) for the combined data rate becomes 3 times faster data rate than a single data highway data rate (See Application, page 4, lines 19-21), which means said specific number of data highways three (3) is chosen among any number of data highways for said modem interface. Therefore, the limitation of said three parallel data highways in the claim is not patentably significant since it at most relates to the number of data highways for the data rate matters under consideration which is not ordinarily a matter of invention.

In re Yount, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

Referring to claims 5 and 13, Koenig, as modified by AAPA, does not teach said each of said three parallel data highways has a 2 Mbs data rate, but Koenig teaches each of said N parallel data highways has a 1.544 Mbs (See Koenig , col. 9, lines 42-51).

However, the claim recites said 2 Mbs data rate without any patentable advantage in the specification (See claim 5 and Application, page 4, lines 18-19). In other words, the Applicant states each data highway has an associated maximum data rate, such as 2 Mbs (See Application, page 4, lines 18-19) for the combined data rate becomes 3 times faster data rate than a single data highway data rate (See Application, page 4, lines 19-21), which means said specific 2 Mbs data rate is chosen among any data rate of a specific type of data highway for said modem interface (See Application, page 4, lines 21-23). Therefore, the limitation of said 2 Mbs data rate in the claim is not patentably significant since it at most relates to the data rate of a specific data highway for the data rate matters under consideration which is not ordinarily a matter of invention. *In re Yount*, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

Referring to claim 15, Koenig discloses a radio network terminal (RNT; i.e., processor based voice and data TSI system 20 of Fig. 4) transferring data (See col. 1, lines 4-10) between a first high data rate interface (i.e., T-1 48 of Fig. 4) and a second high data rate interface (i.e., T-1 50 of Fig. 4), said RNT comprising: an input and output for transferring data over said first high data rate interface (See T-1 50 and Framers 44 & 60 in Fig. 4); a plurality of parallel data highways (i.e., PCM highways 36, 38, 40, 42, 52, 54, 56 and 58 in Fig. 4, in parallel) having frames with time slots for transferring data (See col. 9, lines 38-62), said plurality of data highways outputting (e.g., framing by Framer 60 of Fig. 4) data to said first and second high data rate interfaces (i.e., T-1 48 and T-1 50, respectively, in Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 36 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said first high data rate interface (i.e., T-1 48 of Fig. 4) in selected time slots (See col. 11, lines 43-50); at least one of said data highways (e.g., PCM highway 38 in Fig. 4) having an input (e.g., Framer 44 of Fig. 4) configured to receive data from said second high data rate interface (i.e., T-1 50 of Fig. 4); and a processor (i.e., DSP processor 24 of Fig. 4) for controlling data transfer between said plurality of data highways (See col. 11, lines 58-65).

Koenig does not expressly teach said second high data rate interface is a wireless interface; and a receiver and a transmitter for transferring data over said wireless interface.

AAPA discloses a modem (MODEM 28 of Fig. 1), wherein said modem for transferring data (See page 1, lines 8-10) between an user terminal 46 (Fig. 1) and a second high data rate interface, which is a wireless interface (i.e., wireless air interface 38 of Fig. 1); and a receiver (i.e., receive circuitry 32 of Fig. 1) and a transmitter (i.e., transmit circuitry 36 of Fig. 1) for transferring data over said wireless interface (See page 1, lines 17-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said transmitter and said receiver, as disclosed by AAPA, in said radio network

terminal, as disclosed by Koenig, for the advantage of transferring data between wired components of the network and a wireless communication network (See AAPA, page 1, lines 8-13).

Referring to claim 18, Koenig, as modified by AAPA, teaches said frames have time slots (See the above prior claim 15 rejection), but does not expressly teach said frames have sixteen time slots. However, the claim recites said sixteen time slots without any patentable advantage in the specification (See claim 8 and Application, page 4, line 17). In other words, the Applicant states a preferred frame would have sixteen (16) time slots, which means said specific number of time slots (16) in a frame is chosen among any number of time slots per frame as a preference of one of ordinary skill in the art. Therefore, the limitation of said sixteen time slots in the claim is not patentably significant since it at most relates to the number of time slots in a frame under consideration which is not ordinarily a matter of invention. *In re Yount*, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

Referring to claim 19, Koenig, as modified by AAPA, does not teach said plurality of parallel data highways is three parallel data highways, but Koenig teaches N number of parallel data highways (See Koenig, col. 9, lines 42-51).

However, the claim recites said three parallel data highways without any patentable advantage in the specification (See claim 4 and Application, page 4, line 15). In other words, the Applicant states a multiple data highway structure is used, such as three (3) PCM highways (See Application, page 4, line 15) for the combined data rate becomes 3 times faster data rate than a single data highway data rate (See Application, page 4, lines 19-21), which means said specific number of data highways three (3) is chosen among any number of data highways for said modem interface. Therefore, the limitation of said three parallel data highways in the claim is not patentably significant since it at most relates to the number of data highways for the data rate matters under consideration which is not ordinarily a matter of invention.

In re Yount, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

13. Claims 2, 3, 10, 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Mergard et al. [US 6,415,348 B1; hereinafter Mergard].

Referring to claims 2, 3, 10 and 11, Koenig, as modified by AAPA, discloses all the limitations of the claims 2, 3, 10 and 11, respectively, except that does not teach said first high data rate interface is an IOM-2 highway or a PCM highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a first high data rate interface (i.e., means for communicating) is an IOM-2 highway or a PCM highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said modem interface, as disclosed by Koenig, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Referring to claim 20, Koenig, as modified by AAPA, discloses all the limitations of the claim 20, except that does not teach said first high data rate interface is an IOM-2 highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a first high data rate interface (i.e., means for communicating) is an IOM-2 highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said radio network terminal, as disclosed by Koenig, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

14. Claims 6, 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Beyda et al. [US 6,058,111 A; hereinafter Beyda].

Referring to claim 6, Koenig, as modified by AAPA, discloses all the limitations of the claim 6 except that does not teach a plurality of read and write devices, each write device fixedly writes to one of said plurality of data highways and each read device is capable of reading data from any of said plurality of data highways.

Beyda discloses a network (5000 of Fig. 3) in a system for providing a droppable switched circuit, wherein a plurality of time slot interchangers (i.e., TSIs in Fig.5) comprise: a plurality of read and write devices (i.e., a plurality of TSI input circuits 5200 and TSI output circuits 5600 in Fig. 5), each write device (i.e., TSI output circuit) fixedly writes to one of a plurality of data highways (i.e., fixedly outputs to a group of port controllers among a plurality of port controllers 4000-0 through 4000-31 in Fig. 1) and each read device (i.e., TSI input circuit) is capable of reading (i.e., inputting) data from any of said plurality of data highways (i.e., inputting from any of port controllers among a plurality of port controllers 4000-0 through 4000-31 in Fig. 1). Refer to col. 6, lines 22-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined said time slot interchanges (i.e., TSIs), as disclosed by Beyda, in said processor in said modem interface, as disclosed by Koenig, as modified by AAPA, for the advantage of being required to transmit only $1/N^{\text{th}}$ (e.g., $1/8^{\text{th}}$) of received data (i.e., received digital words), where N is a number of TSI units (e.g., TSI units) during a given frame (See Beyda, col. 6, lines 27-32).

Referring to claim 7, Koenig, as modified by AAPA and Beyda, teaches said processor (i.e., TSI control circuit 5400 of Fig. 5; Beyda) controls each read device (i.e., TSI input circuit; Beyda) so that read device reads from a selected one of said data highways (i.e., so that input TSI input circuits' data from a selected one of said data highways via SRC ADRS 5487 of Fig. 5; See Beyda, col. 7, lines 35-41).

Referring to claim 14, Koenig, as modified by AAPA, discloses all the limitations of the claim 14 except that does not teach said data transfer is controlled using a plurality of read and write devices, each write device fixedly writes to one of said plurality of data highways and each read device is capable of reading data from any of said plurality of data highways.

Beyda discloses a network (5000 of Fig. 3) in a system for providing a droppable switched circuit, wherein a data transfer is controlled (See Fig. 3 and 5) using a plurality of time slot interchangers (i.e., TSIs in Fig.5) comprising a plurality of read and write devices (i.e., a plurality of TSI input circuits 5200 and TSI output circuits 5600 in Fig. 5), each write device (i.e., TSI output circuit) fixedly writes to one of a plurality of data highways (i.e., fixedly outputs to a group of port controllers among a plurality of port controllers 4000-0 through 4000-31 in Fig. 1) and each read device (i.e., TSI input circuit) is capable of reading (i.e., inputting) data from any of said plurality of data highways (i.e., inputting from any of port controllers among a plurality of port controllers 4000-0 through 4000-31 in Fig. 1). Refer to col. 6, lines 22-26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined said time slot interchanges (i.e., TSIs), as disclosed by Beyda, in said means for transferring data, as disclosed by Koenig, as modified by AAPA, for the advantage of being required to transmit only $1/N^{\text{th}}$ (e.g., $1/8^{\text{th}}$) of received data (i.e., received digital words), where N is a number of TSI units (e.g., TSI units) during a given frame (See Beyda, col. 6, lines 27-32).

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Rouphael et al. [US 6,301,291 B1; hereinafter Rouphael].

Referring to claim 16, Koenig, as modified by AAPA, discloses all the limitations of the claim 16 except that does not teach said receiver and transmitter transfer data using QPSK modulation in CDMA format.

Rouphael discloses a wireless communication systems, wherein a receiver (i.e., Receiver 20 of Fig. 1A) and a transmitter (i.e., Transmitter 10 of Fig. 1A) transfer data using QPSK modulation in CDMA format (See Fig. 1 and col. 2, lines 18-42 and col. 3, line 38 through col. 4, line 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said QPSK modulation in CDMA format, as disclosed by Rouphael, to said receiver and transmitter, as disclosed by Koenig, as modified by AAPA, so as to modulate/demodulate using QSPK in CDMA format with the advantage of improving data reception (See Rouphael, col. 2, lines 7-13).

16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koenig [US 6,101,198 A] in view of AAPA as applied to claims 1, 4, 5, 8, 9, 12, 13, 15, 18 and 19 above, and further in view of Cannella et al. [US 5,063,592; hereinafter Cannella].

Referring to claim 17, Koenig, as modified by AAPA, discloses all the limitations of the claim 17 except that does not teach said RNT is operatively couple to an ISDN terminal via said first high data rate interface.

Cannella discloses a foreign exchange 110 (Fig. 1), wherein an RNT (i.e., switch 112 of Fig. 1) is operatively couple to an ISDN terminal (i.e., ISDN set 120 of Fig. 1) via a first high data rate interface (i.e., carrier T-1 line 130 of Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have coupled said ISDN terminal with its ISDN interface, as disclosed by Cannella, to said radio network terminal via said first high data rate interface, as disclosed by Koenig, as modified by AAPA, for the advantages of providing both local (i.e., communication among ISDN terminals via ISDN interface, locally) and said wireless communication service (i.e., foreign exchange services) by said single first high data rate interface (i.e., single subscriber line). Refer to Cannella, col. 2, lines 29-31.

17. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pillan et al. [US 5,483,556 A; hereinafter Pillan] in view of AAPA.

Referring to claim 21, Pillan discloses a method for data compression/decompression for a HDLC type frame (See col. 1, lines 8-9 and col. 2, lines 24-34), comprising: producing data (i.e., deriving a first reduced data frame) having a first high-level data link controlling (HDLC) encoding (See col. 2, lines 55-57) at a first communication station (i.e., EMISSION side in Fig. 4) for transfer over a wireless interface (i.e., transmission network 3 of Fig. 2); encoding (i.e., compressing) said first HDLC encoded data (i.e., said first reduced data frame) into a second HDLC format (i.e., a first compressed reduced data frame) such that said produced data is double HDLC encoded (See col. 2, lines 59-60); transmitting said double HDLC encoded data (i.e., said compressed reduced data frame) over said wireless interface (See col. 2, lines 61-65); receiving (i.e., restoring) said double HDLC encoded data (i.e., said first compressed reduced data frame) at a second communication station (i.e., RECEPTION side in Fig. 4; See col. 2, line 65 through col. 3, line 2); and removing (i.e., decompressing) said second HDLC encoding (i.e., said first reduced data frame) to recover said first HDLC encoded data (i.e., an original first data frame; See col. 3, lines 3-8) at said second communication station.

Pillan does not expressly teach said method of communicating data over said wireless interface of a wireless communication network having said first and second communication station.

AAPA teaches a method of communicating data (See Background and Fig. 1) over a wireless interface (i.e., wireless air interface 38 of Fig. 1) of a wireless communication network (Fig. 1) having a first and second communication station (i.e., Radio Network Terminal 40 and Radio Carrier Station 26 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied said method of communicating data, as disclosed by Pillan, to said data communication of said wireless communication network, as disclosed by AAPA, for the advantage of transferring data between wired components of the network and a wireless communication network (See

AAPA, page 1, lines 8-13) for complying with a recommendation of reduced transmission line occupancy (See Pillan, col. 1, lines 12-21).

18. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pillan [US 5,483,556 A] in view of AAPA as applied to claim 21 above, and further in view of Mergard [US 6,415,348 B1].

Referring to claim 22, Pillan, as modified by AAPA, discloses all the limitations of the claim 22 including said first station is a RNT (i.e., Radio Network Terminal 40 of Fig. 1; AAPA) and said second station is a RCS (i.e., Radio Carrier Station 26 of Fig. 1; AAPA) except that does not teach prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from an IOM-2 highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a RNT (i.e., Radio Network Terminal) is an IOM-2 highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said RNT, as disclosed by Pillan, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Pillan, as modified by AAPA and Mergard, teaches prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from said IOM-2 highway.

Referring to claim 23, Pillan, as modified by AAPA, discloses all the limitations of the claim 23 including said first station is a RCS (i.e., Radio Carrier Station 26 of Fig. 1; AAPA) and said second station is a RNT (i.e., Radio Network Terminal 40 of Fig. 1; AAPA) except that does not teach prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from an PCM highway.

Mergard teaches a High-Level Data Link Controller (viz., HDLC controller), wherein Channels of HDLC controller can be coupled to a RCS (i.e., Radio Carrier Station) is an PCM highway (See col. 1, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said HDLC controller, as disclosed by Mergard, in said RCS, as disclosed by Pillan, as modified by AAPA, for the advantage of providing a broad range of communications applications (See Mergard, col. 1, lines 25-27).

Pillan, as modified by AAPA and Mergard, teaches prior to producing said first HDLC encoded data, receiving said first HDLC encoded data from said PCM highway.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hori [US 6,356,549 B1] discloses digital switching equipment.

Jung et al. [US 5,793,841 A] disclose apparatus and method for receiving dual highway data in electronic switching system.

Chambers [US 5,930,715 A] discloses method of local routing and transcoder thereafter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Lee whose telephone number is 703-305-5950. The examiner can normally be reached on 9:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Application/Control Number: 09/699,145


Art Unit: 2189

Page 17

Non-Final Action

Christopher E. Lee
Examiner
Art Unit 2189

CEL/ *CEL*
March 10, 2003



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